CRITICAL THINKING

WHAT IS CRITICAL THINKING?

- *Critical thinking is a higher order of thinking:* it is the practice of using a number of different advanced thinking skills in a variety of complex ways.
- *Critical thinking focuses on thought:* it looks at ***how*** facts are proven, arguments are formed, conclusions are reached, not just ***what*** the facts, argument or conclusion may be.
- *Critical thinking is self-reflexive*: it involves ***reflecting*** on, questioning and testing your own thinking processes.
- *Critical thinking is discipline-specific:* it engages in particular forms of reasoning, such as mathematical reasoning, historical analysis or literary interpretation, which are specific to a particular discipline.

HOW IS CRITICAL THINKING DIFFERENT FROM THINKING?

	THINKING	CRITICAL THINKING
FOCUS	On information: data, facts, examples On ideas: opinions, positions	On ideas: assumptions, biases, flaws in reasoning, point of view, context, implications
ACTIVITY	Organizing and making connections between pieces of information or ideas, sometimes making basic inferences	Deeply and broadly questioning and testing the ways in which an idea is formed as well as how you have been interpreting and examining the idea. Thinking about your own thinking while you are thinking about the thinking of others.
GOAL	To form an opinion about what you are thinking about	To apply criteria in forming a conclusion or evaluation about ***what*** you have been thinking about and ***how*** you have been thinking about it.

WHAT IS GOOD CRITICAL THINKING?

Good critical thinking meets the criteria of these intellectual values:

- Clarity
- Accuracy
- Precision
- Consistency
- Relevance
- Sound Evidence
- Good Reasons
- Depth
- Breadth
- Fairness

HOW DO WE THINK CRITICALLY?

1. We Begin With the Right Approach

Reason: We base our thinking in logic, not feelings.
Self-Awareness: We pay attention to our own and others' assumptions, biases and perspectives.
Integrity: We care about doing our intellectual work honestly and accurately rather than about being right.
Discipline: We put effort into doing our work comprehensively and precisely.
Open-mindedness: We consider alternatives and other points of view.

2. We Look Deeper and Farther

There are countless ways in which we look deeper and farther when thinking critically. For example, we look deeper when we make inferences about an argument's hidden assumptions and values. We look farther when we connect a study to theories in our discipline. We always think about the implications and importance of what we find.

3. We Ask Complex Questions

We develop and pose questions that help us look deeper and more broadly and that require a variety of thinking processes to answer. We generate specific, complex questions based on what exactly we are thinking about, starting with basic critical inquiry:

- Who is the implied audience?
- What are the strengths and weaknesses of this?
- What are the different possible solutions to this problem and which seems most effective?
- What is the nature of the relationship between this and that?
- What exactly is the logical flaw in this reasoning?
- Is this really relevant to that? If not, where does the connection break down?
- What are the underlying assumptions and values?

4. We Answer Questions Using a Variety of Thinking Processes

Analysis: breaking something into parts to better understand the parts and the whole *(identifying, classifying, categorizing, comparing)*

Synthesis: making connections between the parts and the whole to see the pattern of relationships *(organizing, connecting, designing, predicting)*

Interpretation: examining the connection (s) between the parts and the whole to make inferences about the implications and meanings of the pattern(s) *(associating, inferring, decoding)*

Evaluation: forming judgments about meanings, qualities and values *(justifying, critiquing, verifying, deciding)*

5. We Reflect on How We Are Answering the Questions

Throughout the process, we ask ourselves questions such as:
Is that clear or is there still some confusion I need to clarify?
Is that really true?
Do I need to be more specific or detailed?
How is that connected to the central focus?
Am I thinking about this in a complex enough way or should I go deeper and further in my thinking?
Do I need to consider a bigger framework or a different point of view?

WHAT MIGHT BE AN EXAMPLE OF CRITICAL THINKING?

As critical thinking is a highly complex operation, the following examples are mere sketches of what is involved.

SUBJECT	QUESTION	ACTIVITY	REFLECTION
Management	What are the qualities of an effective Manager?	**Analysis:** breaking down the role of the Manager into tasks and inferring the qualities needed to complete each task effectively.	Have I included all relevant tasks? Are there some qualities a good Manager has that aren't related to a task?
English Literature	How does Hester's child Pearl's name in Nathaniel Hawthorne's *The Scarlet Letter* function as a symbol?	**Interpretation:** examining the implications of the pattern of connections between a passage that uses a pearl as a metaphor, the cultural symbolism of pearls in the historical context of the novel, the circumstances of the child's conception and the value of the child to Hester.	Can I really prove that the symbolism of Pearl's name functions as an assertion that children born of sin are yet pure and valuable or have I gone too far?
Political Science	What are some of the barriers to instituting democracy in the nations of the developing world?	**Synthesis:** making connections by establishing the similarities and differences between a number of developing world countries in terms of problems preventing democratic systems.	Do I have a clear set of classifications to systematize my comparison?
Biology	Is this study on the higher disease rate of farmed Chinook salmon credible?	**Evaluation:** judging the scope, controls and methodology of the study to determine if the scientific method was followed accurately.	Should I look at studies that support an opposing view to see if there is anything I overlooked?